

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 5-10 are presently active in this case. The present Amendment amends Claims 5-7.

In the outstanding Office Action, Claims 5-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Starkey et al. (U.S. Patent No. 5,428,555, herein referred as Starkey) in view of Grube (U.S. Patent No. 6,112,132).

Claims 5-7 have been amended to correct minor informalities. Independent Claim 5 has additionally been amended to recite “wherein said spreadsheet program sends commands to said automaton interface driver.” The present amendment is not believed to raise any issues of new matter because the changes to Claim 5 are supported by the disclosure as originally filed¹ and the changes to Claims 6-7 are mostly formal in nature.

In response to the rejection of Claims 5-10 under 35 U.S.C. §103(a), Applicants respectfully request reconsideration of this rejection and traverse the rejection as discussed next.

Briefly recapitulating, Applicants’ invention relates to a system with at least one automaton and a microcomputer connected to communicate with the automaton. The microcomputer includes a spreadsheet program. An automaton interface driver cooperates with an operating system of the microcomputer to *provide commands from the spreadsheet program* and wherein the *spreadsheet program sends commands to the automaton interface driver*.

Turning now to the applied prior art, the Starkey patent discloses an interactive computer controlled management system for real-time data gathering and analysis of process

¹ See in Applicants’ specification on page 1, lines 30-35.

information relating to a plurality of data sources in a facility and for controlling process functions of the data sources. As acknowledged by the outstanding Office Action, however, the Starkey patent fails to disclose an interface driver that cooperates with an operating system to *provide commands from a spreadsheet program*. The outstanding Office Action purposes to modify the Starkey system by incorporating such features based on the disclosure of the Grube patent and thus asserts that Applicants' claimed invention would have been obvious over these two references..

Furthermore Starkey describes a system wherein the programmable logic controllers are managed from a "Control Window," also called "FGMS Manager Window."² Such a control window is far from being able to provide the same easiness of use and the same adaptability to various systems as the spreadsheet does. Again in Starkey, the spreadsheet is used only for generating report documents, alarm windows and other screen displays.³

The Grube patent describes an automated apparatus wherein the spreadsheet is used with a simple memory function. Grube states that the spreadsheet only stores data⁴ and an interface.⁵ Moreover, the spreadsheet mentioned in Grube is included in a "PC cell controller" (36) which is not the same element as the "smart" component of the disclosed apparatus in Grube. Grube suggests that the apparatus is controlled by the "PLC" itself.⁶ In applicants' invention, however, the spreadsheet is a "smart" component which controls the automaton (8) itself via the interface pilot (4) and the operating system (5). The invention does not include the PLC, as mentioned in Grube. Applicants therefore insist that it is new and non-obvious that the *spreadsheet program sends commands to the automaton interface*

² See Starkey, for example at column 4, lines 22-30, column 8, lines 27-44 and column 10, lines 7-21

³ See Starkey, for example at column 6, lines 50-54 and figures 2A-2D.

⁴ See Grube, for example at column 2, lines 1-9 and lines 49-50.

⁵ See Grube, for example at column 6, lines 48-53.

⁶ See Grube, for example at column 4, lines 3-16.

driver.⁷ Therefore, the applied prior art fails to teach every element of Applicants' claims so that Claims 5-10 are believed to be patentable distinct over the prior art.

Applicants respectfully further traverse the obviousness rejection based on the Starkey and Grube patents because there is insufficient evidence that a person of ordinary skill in the art would have been motivated to combine the teachings of the Starkey and Grube patents.

The outstanding Office Action states that the proposed combination would have been obvious "to combine the teachings of Starkey with the system of Grube because it would provide an improved system wherein a PC controller effectively downloads information in the form of an electronic spreadsheet to a programmable controller."⁸ The record, however, fails to provide the required evidence of a motivation for a person of ordinary skill in the art to perform such modification. While Grube may provide a reason for using a PC controller to effectively download information in the form of an electronic spreadsheet to a programmable controller in an electrochemical grinding apparatus and method to produce burr-free tube sections of precisely defined lengths, Grube fails to suggest why a person of ordinary skill in the art would be motivated to incorporate such a feature in a gas management system including a plurality of networked processors, such as the one disclosed in Starkey.

In particular, Grube uses effectively downloaded information in the form of an electronic spreadsheet to a programmable controller in order to provide desired tube cut length data from a PC cell controller to the control means.⁹ The Grube patent, however, does not suggest that PC cell controller including a spreadsheet program and interface program connected through a communication line with a PLC would work, or would be desired, in a gas management system for real-time data gathering and analysis with a distributed processor

⁷ See Applicants' specification on page 1, last paragraph.

⁸ See outstanding Office Action at page 4, lines 13-18.

⁹ See Grube, for example at column 2, lines 47-53.

environment, much less a need or desire to produce a recorded output of the tube and process parameters in such gas management system. Grube does not state that a real-time gas management system with substantially unlimited number of data sources, such as PLC operated gas cabinets with short response time, need a PC cell controller where the data is stored in downloadable form in an electronic spreadsheet.

In addition, Starkey is not concerned with burr-free tube sections of precisely defined lengths. Instead, the Starkey patent is concerned with a gas management system with a plurality of networked processors and a “substantially unlimited number of data sources without significant decrease in response time.”¹⁰

The Starkey patent further discloses a distributed architecture containing a host PC and one or more netports¹¹ wherein the netports poll the connected data sources on their status, and transmit only relevant data to the host computer.¹² Due to the *decentralization* of the computing to the netports, Starkey’s open-ended architecture permits the addition of virtually unlimited number of netports,¹³ and due to the nature of Starkey’s distributed computing with an important real-time aspect, and the fact that only relevant data can be communicated to a host PC, it is not possible to implement a spreadsheet software, such as the Grube system, which would be able to store data in downloadable form for the PLC’s in an electronic spreadsheet without significant modification of the distributed system setup. As mentioned above, Grube teaches a *centralized* cell controller,¹⁴ which is able to track and record within the same spreadsheet, the serial position of each cut tube in the series, its cut length and its actual cut length.¹⁵

¹⁰ See Starkey, for example at column 2, lines 29-34.

¹¹ See Starkey, for example at column 3, lines 51-58 and in Fig. 1 and Fig. 1B.

¹² See Starkey, for example at column 3, lines 59-63.

¹³ See Starkey, for example at column 4, lines 5-9.

¹⁴ See Grube, for example at column 2, lines 49-55 and in Fig. 3.

¹⁵ See Grube, for example at column 2, lines 1-9.

A person of ordinary skill in the art would not be motivated to add such a centralized cell controller including a spreadsheet into Starkey's decentralized system of netports. Such a modification would be contrary to Starkey's teachings as it would render Starkey's system less efficient in managing its networked processors and substantially unlimited number of data sources. Furthermore, such a modification would require substantial reconstruction or redesign and/or would change the basic principle of operation of the Starkey system.¹⁶ In that respect, Applicants note that Starkey's spreadsheet is only used to monitor processes, not to control them. Starkey teaches that a decentralized control is superior to a centralized control for its intended purpose. Accordingly, the proposed modification of the Starkey system is inconsistent with the teachings of Starkey.

In addition, Starkey states that its structure already achieves the goal of maintaining response time between data sources¹⁷ and wants to provide a facility and gas management system for real-time data gathering, analysis and control.¹⁸ Starkey does not suggest that further improvement is desired, nor that another feature should be added to further improve the facility and gas management system for real time data gathering. In particular, Starkey does not suggest to add a PC cell controller where data is stored in downloadable form in an electronic spreadsheet, as disclosed in Grube.

The Starkey and Grube patents, therefore, do not provide the motivation to perform the proposed modification of the Starkey system. ***In other words, an attempt to bring in the isolated teaching of Grube's apparatus for producing a plurality of finished-cut burr-free tubing sections into Starkey would amount to improperly picking and choosing features***

¹⁶ See In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (reversing an obviousness rejection where the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.")

¹⁷ See Starkey, for example at column 2, lines 25-26.

¹⁸ See Starkey, for example at column 2, lines 44-47.

*from different references without regard to the teachings of the references as a whole.*¹⁹

*While the required evidence of motivation to combine need not come from the applied references themselves, the evidence must come from somewhere within the record.*²⁰ In this

case, the record fails to support the proposed modification of the Starkey system.

In rejecting a claim under 35 U.S.C. § 103(a), the USPTO must support its rejection by "substantial evidence" within the record,²¹ and by "clear and particular" evidence²² of a suggestion, teaching, or motivation to combine the teachings of different references. As discussed above, there is no substantial evidence, nor clear and particular evidence, within the record of motivation for modifying the Starkey system by incorporating Grube's data-driven electrochemical grinding apparatus and method for burr-free tube sections. Without such motivation and absent improper hindsight reconstruction,²³ a person of ordinary skill in the art would not be motivated to perform the proposed modification, and Claims 5-10 are believed to be non-obvious and patentable over the applied prior art.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in

¹⁹ See In re Ehrreich, 590 F.2d 902, 200 USPQ 504 (CCPA, 1979) (stating that patentability must be addressed "in terms of what would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the sum of all the relevant teachings in the art, not in view of first one and then another of the isolated teachings in the art," and that one "must consider the entirety of the disclosure made by the references, and avoid combining them indiscriminately.")

²⁰ In re Lee, 277 F.3d 1338, 1343-4, 61 USPQ2d 1430 (Fed. Cir. 2002) ("The factual inquiry whether to combine references ... must be based on objective evidence of record. ... [The] factual question of motivation ... cannot be resolved on subjective belief and unknown authority. ... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion").

²¹ In re Gartside, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000) (holding that, consistent with the Administrative Procedure Act at 5 USC 706(e), the CAFC reviews the Board's decisions based on factfindings, such as 35 U.S.C. § 103(a) rejections, using the 'substantial evidence' standard because these decisions are confined to the factual record compiled by the Board.)

²² In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, although 'the suggestion more often comes from the teachings of the pertinent references.' The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular." (emphasis added).

²³ See MPEP 2141, stating, as one of the tenets of patent law applying to 35 USC 103, that "[t]he references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention."

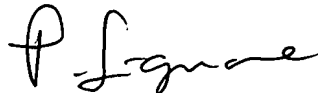
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Reply to Office Action of May 24, 2004

condition for formal Allowance. A Notice of Allowance for Claims 5-10 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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